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ABSTRACT

"Los Arboles Hablan," a video-based curriculum that promotes the learning of Spanish as a second language through study of the Latin American rain forests is described. The 12-session unit was designed for use at the middle school level and integrates science, social science, and environmental education with content focusing on the Amazon rain forest, virgin forests of Chile, and Costa Rica's cloud forest. In the videotape, students are introduced to two Hispanic-American teenagers who act as guides throughout the materials as they learn about and become concerned about the rain forests. The students communicate with relatives in Latin America and eventually go on their own expeditions to the rain forests. Classroom activities are designed to complement the videos. An accompanying teacher's guide was also developed. The report describes the video, student, and teacher materials; the day-by-day class activities; the process and results of field testing the materials; student and teacher feedback, and classroom observations. (Includes the Fall 1997 issue of the "Los Arboles Hablan Newsletter" and order form for the video-based curriculum unit.) (MSE)

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LOS ARBOLES HABLAN:

A Spanish Language Curriculum Unit Based on the Study of Latin American Rain Forests

Paper presented at the 22nd Annual Conference of
The North American Association for Environmental Education

Big Sky, MT

September 28, 1993

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I. INTRODUCTION

Los Arboles Hablan is a video-based curriculum unit that promotes the learning of Spanish as a foreign language through the study of Latin American forests. The project, sponsored by the U.S. Department of Education International Research and Studies Program, consists of a video and accompanying instructional materials for middle school students in grades 7-9, integrating science, social studies and environmental education while teaching the Spanish language. The content specifically focuses on the Amazon rain forest, the virgin forests of Chile and Costa Rica's cloud forest.

The approach to the development of the instructional materials has been grounded in INCRE's belief that language and culture are inseparable and that students are more open to acquiring foreign language skills and to improving existing skills if they develop an interest in and an understanding of the subject matter on which language learning is based. The project focuses on the conservation of forests and provides an opportunity to introduce American students to an environmental issue that is critically important to Latin America and to the world. *Los Arboles Hablan* offers teachers and students a valuable opportunity to engage in Spanish language learning which is geared to and respectful of a wide spectrum of learning styles. In addition, these materials promote respect for Latin American culture, and encourage concern for the preservation of our environment and its inhabitants.

The videotape and printed components of the curriculum unit have been designed to be used in an integrated manner in the Spanish language learning classroom. The curriculum is divided into twelve segments, with activities in each segment designed to take up one or two class periods. If used daily, the curriculum unit takes approximately three weeks to complete, with the possibility of spending at least one or two additional weeks on suggested follow-up and integrative activities.

In the videotape, students are introduced to Teresa and Ricardo, two Hispanic-American high school-aged teenagers who are their guides throughout the video. Each curriculum day, the students view approximately six to eight minutes of video, watching the adventures of Teresa and Ricardo as they become intrigued by and concerned for the rain forests of Latin America. Content and language learning are offered in an engaging, appealing format as Teresa and Ricardo receive letters and calls from relatives in Latin America, and eventually go on their own expeditions to the forests. Actual footage from rain forests of Chile, Brazil, and Costa Rica has been used throughout the video production to offer students the opportunity to see

the beauty of the forests and its inhabitants, as well as to witness the effects of deforestation.

The classroom activities have been specifically designed to complement the video, with related vocabulary and language learning exercises for each day available for middle school level Spanish-language classes. Both the video and written materials contain English and Spanish sections, so as to sufficiently introduce content area while strengthening Spanish language skills. The written materials include scripts of all the video segments, so that students and teachers may read the scripts before-hand or follow along as appropriate. Some Spanish segments of the video also include Spanish subtitles, so that the students may see and hear the words simultaneously. A dictionary of all vocabulary used in the unit is included.

An accompanying Teachers Guide provides 1) the rationale for the development of the materials, 2) a description of the organization of the curriculum, 3) directions for duplication of the student materials, 4) suggestions for integration with other subject area teachers, 5) a discussion of utilizing the video dialogues to promote language learning, 6) a fully classroom-tested set of student evaluation instruments and suggestions for grading, 7) detailed day-by-day lesson plans, teaching tips and background information for each lesson, and 8) a complete set of student materials with answers.

II. THE DEVELOPED INSTRUCTIONAL MATERIALS

Prototype versions of the video, student and teacher materials were field tested and readied for dissemination on schedule and within budget by June 1993. In this section, details of the three components of the curriculum are presented.

A. THE VIDEOTAPE

The use of video is a fundamental component of the *Los Arboles Hablan* curriculum. Brief video segments are used each day to motivate student interest and to provide a visual context for language and content learning. The student activities are woven around the video segments, reinforcing and amplifying language and content introduced in the video.

The video tells the story of two bilingual Latino teen-agers,Teresa and Ricardo, who become interested in studying the Amazon rain forest through a science project. After some research,

which includes watching a television program about forests and a video on the Amazon rain forest, they prepare for a trip to the tropical rain forest. Students see Teresa pack for her trip to Brazil, and watch as Ricardo and Teresa obtain flight information from a travel agent. Finally, they take a trip to the Amazon, where they see the beauty and immenseness of the forest, the plants and animals of the forest and the indigenous people who call the rain forest their home. They also witness the destruction of forest by logging and burning.

Some time after her return from Brazil, Teresa receives a letter from her sister in Costa Rica, inviting her and Ricardo to visit the Costa Rican cloud forest, which is a lush tropical rain forest that only grows on a few mountain peaks in Central America. The two teen-agers set off again, this time to visit the cloud forest, with its rich plant life and many eco-tourists.

By this time, Teresa and Ricardo have learned a great deal about tropical rain forests. Teresa's aunt, who lives in Chile, learns of their interest in forests and calls to invite them on an expedition to the temperate rain forest in the south of Chile, where some of the oldest and tallest trees in the world grow. Teresa and Ricardo join the expedition, completing their study of the Latin American rain forests.

The video, which runs a total of 55 minutes and 22 seconds, consists of 10 brief video segments that are summarized in Table 1 below.

TABLE 1: LOS ARBOLES HABLAN VIDEO SEGMENTS

SCENE #	TITLE	TIME
1.	Meeting Teresa and Ricardo	3:00
2.	Teresa and Ricardo watch a television program	8:15
3.	Teresa and Ricardo watch a video	9:49
4.	Teresa and Ricardo call a travel agent	3:33
5.	Teresa packs for Brazil	1:50
6.	Teresa and Ricardo go to Brazil	6:54
7.	Teresa gets a letter from Costa Rica	4:35

8.	Teresa and Ricardo visit the cloud forest	5:08
9.	Teresa gets a phone call from Chile	2:40
10.	Teresa and Ricardo go to Chile	9:38
	TOTAL PROGRAM TIME	55:22

The video combines file footage of Latin American rain forests with original scenes of Teresa and Ricardo that were shot locally. All file footage was purchased in 3/4" NTSC format from the following sources, with explicit permission granted to INCRE for its use in this educational project:

Videociência, Rio de Janeiro, Brazil
Jean P. Bouciaut Productions, Brookline MA
Canal 13, San José, Costa Rica
Videosphere Studio, Arlington VA
Ancient Forests International, Redway CA

Additional original footage was shot for this project in the Monteverde Cloud Forest Reserve in Costa Rica. Original music for the soundtrack was provided by the Brazilian group Manga-Rosa, based in Jamaica Plain MA, and the Andean musician Hector Salgado of Berkeley CA. Narration for the travel scenes was recorded at Effectside Music Studio in Arlington MA, and the soundtrack was edited and remixed at INCRE.

All off-line editing for the production was conducted in-house at INCRE using professional quality computer controlled video editing equipment that ensured the highest video resolution and precision. The final on-line edit was mastered in Betacam SP at Continental Cablevision studios in Cambridge MA. A complete list of credits for the video production is included in Appendix A.

B. STUDENT MATERIALS

The curriculum is based on a whole-language approach to learning, and the student activities consist of a wide variety of language exercises based on vocabulary and content from the video segments. Student activities for the 12-day unit are summarized in Table 2 below.

TABLE 2: LOS ARBOLES HABLAN STUDENT ACTIVITIES

DAY 1	Learning Objectives
Introductory Reading in English	Orientation to unit Introduction of key Spanish vocabulary Background information on Chico Mendes
Bilingual Dialogue: Introducing Teresa and Ricardo	Introduce fully bilingual characters Promote Spanish listening skills
Spanish Dialogue: T+R Watch a TV Program	Spanish reading, listening and comprehension Vocabulary acquisition Cooperative learning
Homework: Characteristics of rain forests	Latin American geography Location of 3 types of rain forest Main characteristics of rain forests Environmental importance of forests Alternatives to forest destruction
DAY 2	
Spanish written exercise	Reinforcement of rain forest location Spanish sentence construction Cooperative learning
Spanish Dialogue: T+R Watch a Video	Spanish reading, listening and comprehension Vocabulary acquisition Cooperative learning
Video about rain forests narrated in English	Latin American geography Location of 3 types of rain forest Main characteristics of rain forests Environmental importance of forests Alternatives to forest destruction
Homework: Reading in English and Spanish on Tropical Rain Forest; Spanish sentence comp.	Spanish reading and comprehension Spanish sentence construction Main characteristics of tropical rain forests Environmental importance of forests

TABLE 2: LOS ARBOLES HABLAN STUDENT ACTIVITIES continued

DAY 3	Learning Objectives
Spanish carrousel exercise	Main characteristics of tropical rain forest Spanish sentence construction Cooperative learning
Spanish verbal exercise	Latin American geography Proximity of countries to the equator Oral Spanish sentence response
Homework: Spanish reading comp.; True/False	Spanish sentence construction Reading comprehension Reinforcement of content in Spanish
Student Investigation: Calling Travel Agent	Data gathering, real-world connection
DAY 4	
Spanish Dialogue: T+R call a travel agent	Spanish reading, listening and comprehension Vocabulary acquisition Cooperative learning
Group exercise: calling a travel agency	Spanish sentence construction Reading comprehension Reinforcement of content in Spanish Use of real-world data Reinforcement of Spanish numbers, days of the week
Video vocabulary ex.: T packs for Brazil	Spanish vocabulary development
Homework: Packing exercise	Spanish sentence completion Reading comprehension, vocabulary development
DAY 5	
Spanish Dialogue: T+R go to Brazil	Spanish reading, listening and comprehension Geography and science content Vocabulary acquisition Cooperative learning
Quiz	Spanish reading comprehension Spanish sentence construction Reinforcement of content in Spanish
Word Search	Vocabulary Reinforcement

TABLE 2: LOS ARBOLES HABLAN STUDENT ACTIVITIES continued

DAY 6	Learning Objectives
Spanish Dialogue: T gets a letter from Costa Rica	Spanish reading, listening and comprehension Geography and science content Authentic Central American dialogue Vocabulary acquisition Cooperative learning
Calling a Tourist Agency Exercise	Spanish reading and comprehension Reinforcement of *lo/la* forms Content re: cloud forest Cooperative learning
Exercise: What to bring to the cloud forest?	Spanish sentence completion Reading comprehension Map reading
Hwk: Reading re: Cloud Forest of Costa Rica	Science and environmental content Effects of ecotourism
DAY 7	
Spanish Dialogue: T+R visit the cloud forest	Spanish reading, listening and comprehension Science content Vocabulary acquisition Cooperative learning
After-Video Q&A Exercise	Spanish reading comprehension, sentence construction Reinforcement of content
Reading Comprehension Exercise	Spanish reading comprehension, sentence construction Reinforcement of content
Hwk: Reading re: Chilean Temperate Rain Forest	Science and Environmental Content
DAY 8	
Spanish Dialogue: T receives a call from Chile	Spanish reading, listening and comprehension Science and environmental content Vocabulary acquisition Cooperative learning

TABLE 2: LOS ARBOLES HABLAN STUDENT ACTIVITIES continued

DAY 8 continued	**Learning Objectives**
Spanish True/False exercise	Listening comprehension Content reinforcement
Spanish conversation exercise	Reading comprehension Cooperative learning
Hwk: Using Chilean Tourist Guide	Reading Comprehension Sentence construction Vocabulary, geography
DAY 9	
Spanish Dialogue: T+R go to Chile	Spanish reading, listening and comprehension Science and environmental content Vocabulary acquisition Cooperative learning
Group dialogue exercise	Spanish sentence completion Content reinforcement Cooperative learning
Assign final project: bilingual poster	Artistic creativity, focus on one type of rain forest, science and environmental content, geography, Spanish vocabulary, paragraph construction
Hwk: Review exercise	Spanish reading comprehension Content and vocabulary review
DAY 10	
Crossword puzzle	Vocabulary review
Exercise: What can we do now?	List of follow-up activities, ways to become more informed or actively participate in rain forest preservation activities.
Work on poster project	Artistic creativity, focus on one type of rain forest, science and environmental content, geography, Spanish vocabulary, paragraph construction
Hwk: Spanish review exercise	Review of vocabulary, content of unit Students write their own dialogues

TABLE 2: LOS ARBOLES HABLAN STUDENT ACTIVITIES continued

DAY 11	Learning Objectives
Review exercises	Review of vocabulary, content of unit
Dialogue exercise	Students perform their dialogues
DAY 12	
Final Test, student feedback form	Assessment of content, sentence construction, sentence completion, reading comprehension

Each student activity is presented in written form and numbered by day. For example seven sheets are required for Day 1, and these are numbered 1-1 to 1-7. The sheets for Day 2 are numbered 2-1 to 2-6, and so on. At the end of the student activity sheets is the Los Arboles Dictionary that contains all the vocabulary used in the unit. There is a total of 78 student sheets, arranged on 42 double-sided pages.

A master copy of the student materials is provided for photocopying, along with specific instructions for teachers on how to copy the materials back-to-back. Teachers are asked to copy the student materials on pre-drilled 3-hole punch paper (preferably using recycled paper), and to distribute all the materials on the first day of the unit. Each student is asked to supply a small 3-ring binder to store all materials for the unit. Students are asked to bring their binders with the materials with them to class every day, and no additional materials are needed.

The 3-ring binder for student materials allows students to take out and replace certain pages (for example homework sheets turned in for grading, or dialogue sheets when reading in class). It also allows students to look for information throughout the materials (for example when using the dictionary, or when referring to one of the maps). Finally, the binder keeps student work organized throughout the unit so they are able to review all their work to prepare for the final assessment. Students do all of their writing on the sheets that are provided, so there is no need for a notebook or loose papers.

C. TEACHER'S GUIDE

The Teachers Guide that accompanies the video and student materials is designed to provide a comprehensive collection of background information, organizational guidance and teaching strategies for the unit. The guide includes the following 9 resources:

1) An introduction to the curriculum, with a basic rationale for and overview of the curriculum.

2) A description of the organization of the curriculum, so that teachers are oriented to how the materials are organized.

3) Directions for duplication of the student materials, which explain how materials should be copied and disseminated to students.

4) Suggestions for integration with other subject area teachers. The curriculum offers many opportunities for integration with science and social studies to teach about the scientific and environmental roles of rain forests, and the geography and culture of Latin America.

5) A discussion of utilizing the video dialogues to promote language learning. Teachers are encouraged to review dialogues in English before viewing each video segment, then to have students practice the dialogues after watching the video. The text of the narration for the three trips appears on the video with Spanish subtitles, so students hear the Spanish pronunciation and see the written Spanish simultaneously, while watching images that provide a context for the dialogue and enhance their understanding of the spoken language.

6) A fully classroom-tested set of student evaluation instruments and suggestions for grading. There are many opportunities for assessing student progress throughout the curriculum unit, including daily homework assignments, a quiz after day 5, a final test, and a poster project. In addition, teachers can grade student participation in a variety of individual, group and whole-class activities.

7) Detailed day-by-day lesson plans, teaching tips and background information for each lesson. The approximate time for each classroom activity is given, and lesson plans have been designed for a 45-minute class period. In addition, background information for teachers

is provided in order to enhance discussion of environmental and science questions that may come up in class. Suggestions for optional follow-up activities are also provided.

8) A complete set of student materials with answers. All student materials are reproduced in the teacher's guide along with answers in italics. The materials are organized sequentially by day, so that the lesson plan for each day is followed by the corresponding student materials. The Los Arboles Dictionary is also included.

9) A teacher feedback form is provided at the end of the guide and teachers are solicited to send their assessment of the curriculum unit to INCRE, with suggestions for improvement and ideas for new activities that could be included in revisions of the materials. A student feedback form is also provided, so that students using the curriculum can also give their reactions to the unit and make suggestions for improvements.

III. FIELD TESTING AND EVALUATION

The *Los Arboles Hablan* materials have been classroom tested and evaluated in 17 middle school Spanish I and Spanish II classes in the spring of 1993. This section describes the nature of the field test sites, the evaluation methodology, the evaluation results and conclusions, and recommendations based on the field testing of the curriculum unit.

A. FIELD TEST SITES

Two middle school sites were selected for field testing and evaluation of the curriculum unit. One site was the Fairgrounds Junior High School in Nashua NH, and the other was the Randolph Junior High School in Randolph MA. Fairgrounds Junior High has won awards as the best junior high school in New Hampshire and was nationally recognized in 1989 as an outstanding school by then-President Bush. It is located in a small town environment in southern New Hampshire. Its student population is predominantly white and from relatively affluent families. Spanish instruction at the school begins in 8th grade, and classes meet daily for 50 minutes. All 275 8th and 9th grade students in Spanish I and Spanish II participated in the field test.

Randolph Junior High School, the other field test site, is located in a predominantly blue-collar suburb of Boston. School enrollment includes 31% non-white and Hispanic students, and 17%

are students whose first language is not English. Spanish instruction at the school begins in 7th grade and classes meet daily for 45 minutes. All 190 8th grade students in Spanish II participated in the field test.

B. METHODOLOGY

The two goals of the field testing and evaluation were 1) to obtain feedback from teachers and students and classroom observers that would be useful in improving the content and organization of the curriculum unit, and 2) to assess the extent to which the curriculum unit engaged student interest and promoted learning of Spanish and content related to Latin American forests.

The first phase of field testing at each site was a day-long teacher training workshop. The objective of the workshop was to familiarize the participating teachers with the entire curriculum, and at the same time to obtain their feedback about the appropriateness of activities and assessment items for their students. The workshop also provided an opportunity for teachers to record the correct answers for all activities, and to point out typographical and grammatical errors that somehow managed to creep into the student materials.

Selected classes were pre-tested using the final assessment instrument. The instrument assesses content knowledge related to rain forests and Latin American geography, as well as testing Spanish reading comprehension, sentence construction and sentence completion.

Teachers were given photocopied sets of student materials for all participating students on 3-hole punch paper, which were distributed to students on the first day of the unit, and which students kept in 3-ring binders.

INCRE evaluators logged a total of 45 hours of classroom observation, and collected data on student reaction to the materials, amount of class time per activity, difficulties with organization or content of activities, effective teaching strategies, and errors and additions in the student materials. Each curriculum day was observed in at least 3 different Spanish I and Spanish II classes. The classroom observations also offered a lot of informal and immediate feedback about the materials from the participating teachers. Changes in the curriculum

materials based on observations and teacher feedback were noted and materials were revised as appropriate.

Several evaluation activities were conducted as the unit came to a close at each site. All students took the post-test, which was the same instrument as the pre-test. Students also completed a feedback form that solicited their opinions of the curriculum unit, asked them which activities they enjoyed the most and the least, and solicited their suggestions on how to improve the curriculum.

At the close of the unit, INCRE evaluators organized a teacher focus group at each site to debrief. Teachers were able to assess the impact of the curriculum, make more general suggestions for improvements, and share the results of the student poster projects. The debriefing meeting was also an opportunity to thank the teachers for their time and effort in field testing the unit. Finally, teachers were provided with a feedback form in order to give individual written feedback about the unit.

C. RESULTS

All data indicate that the curriculum unit was very well received and achieved defined learning objectives. Student and teacher reaction was overwhelmingly positive, and results of pre-post testing showed large gains in Spanish language skills and in content knowledge related to Latin American geography and rain forests. This section presents the results obtained from the various data collection instruments.

1. Test Results

Of the 465 participating students, a total of 177 students in 8 classes were sampled to take the pre- and post-tests. All other students only took the post-test. The pre-post sample consisted of 64 Spanish I and 113 Spanish II students.

The test results showed consistent and highly significant gains in all sections of the test. The composite score on the written test increased from a mean of 65.4 ($s = 10.8$) on the pre-test to a mean of 81.8 ($s = 11.3$) on the post test, a mean gain of 16.4 points, or 25.1% ($t=34.8$, $p<.001$). There were no significant differences in the pre-test scores between students in Spanish I and Spanish II. The average gain of Spanish I students was actually

somewhat higher than the average gain of Spanish II students: Spanish I students increased their scores by an average of 18.2 points, while Spanish II students increased their scores by an average of 15.5 points ($F=7.6$, $p<.05$).

The gains held consistently across the different sections of the test. The test has two main components. The first component (Sections I to IV of the test) assesses Spanish vocabulary and reading comprehension, as well as content knowledge related to the three types of rain forest. The first component counts for 70% of the total test score. The second component (Sections V to VII of the test) assesses content knowledge related to the three types of rain forest in English, and accounts for 30% of the total test score. Table 3 below shows the gains from pretest to post-test on both components of the instrument.

TABLE 3: PRE/POST TEST GAINS

	Percent Gain
Component 1: Spanish vocabulary Spanish Reading Comprehension Content Knowledge	27.3%
Component 2: Content Knowledge in English	19.9%
Composite	25.1%

It should be noted that the sample that was pre/post tested was representative of all students participating in the field test. There was no significant difference in the mean post-test scores of the pretested group and the students who only took the post-test.

2. Student Feedback

A total of 319 students at the two field test sites completed the feedback form. 50% said that they enjoyed the *Los Arboles Hablan* curriculum "a lot" or "quite a bit", and only 13% said they enjoyed the curriculum "a little" or "not at all". 70% thought that the curriculum unit was more interesting than their regular Spanish class, and only 8% thought that the unit was less interesting than their regular class. 87% thought that the curriculum unit should be used in Spanish class again next year.

The most popular activity by far was watching the videos, which was cited by 66% of students as the activity they liked the most. Other popular activities that were listed by students included (in order of popularity) the final poster project, working in groups, learning about rain forests, the crossword puzzle, the dialogues, the worksheets, and calling the travel agency.

By far the least popular activity named by students (not surprisingly, perhaps) were the final test, quiz and homework, which were cited by 40% of students. Only 5% of student respondents named watching the videos as one of their least favorite activities.

The most interesting result on the student feedback form involved how much students thought they learned during the unit. While students thought that they learned some Spanish (3.2 on the 5-point Leikert scale), they thought that they learned quite a bit about Latin American forests (4.1 on the scale). This difference was most notable for the Spanish II students in Nashua, who averaged 2.9 on the scale for learning Spanish, but 4.1 for learning about Latin American forests. 81% of the Nashua students thought they learned "a lot" or "quite a bit" about Latin American forests, but only 22% thought they learned "a lot" or "quite a bit" of Spanish. The results of these questions are particularly interesting when compared with the final test results (reported in section 1 above), which showed that students advanced considerably in their Spanish language skills as well as in their knowledge of Latin American forests.

Another interesting finding was that while 33% of Randolph students thought that the unit was harder than their regular Spanish class, only 2% of Nashua students thought that the unit was harder. However, many of the Randolph students who thought the unit was hard also thought it was more interesting than their regular Spanish class. Also, it is notable that the majority of Nashua students who found the unit easier than their regular Spanish class were 9th grade Spanish II students.

Students also had a variety of comments about the unit, including the following:

> "It makes students more willing to learn when the learning is based on something like the rain forests."

"You not only learn about the forests, you learn more Spanish while your (*sic*) at it."

"It's interesting to learn about the problems of the world in a different language."

"I enjoyed it. I learned about rain forests, even different cultures. I also learned about some of the different species. It was interesting."

"It helps you learn more about the culture of Latin America."

"I think it is an easier and more efficient way to learn Spanish. I would like to see units about all the other natural features of the world."

"The dictionary was a good idea because now I can keep it and know how to say a few words that I otherwise would not know how to say."

"I had no idea about the rain forests and the danger they are in."
"I really enjoyed being able to try out your new way of teaching Spanish to the kids."
"It gave us a good break from the textbook and is a more interesting way to learn."

"It is a good subject to head out of school with. I know that during the summer I will think about the rain forests."

"We learned a lot of Spanish and about working together. Also about the rain forests and how we can save or conserve them."

"It teaches Spanish vocabulary and it teaches geography we didn't know."

"I think there should be a program for elementary school kids too (Not in Spanish though). My little sister enjoyed looking at the unit and I translated for her."

"Make it longer. It was fun."

3. Teacher Feedback

All 6 teachers who field tested *Los Arboles Hablan* were unanimous in their praise of the curriculum unit. On the feedback form, all six said that their students enjoyed the curriculum unit "A lot", and all six also concurred that they enjoyed teaching the unit "A lot". All six also said that they are planning to use the curriculum unit again next year.

Teacher comments included the following:

> "I think the unit is great, well timed and informative. I think you have done a great job putting this together."
>
> "The students really enjoyed the project and they learned a lot of Spanish too. I also learned a great deal using the materials."
>
> "The message is important and the change of pace was great."
> "The unit was very well organized. I didn't have to do lesson plans for two weeks. What a treat!"
>
> "The videos were great. I just wish you could have made them longer."
>
> "This unit is terrific. The only problem was that my students wanted more, they did not want to stop. Are you going to make a sequel?"

In addition to their positive comments about the curriculum, teachers had many excellent suggestions for improvements and additions to the materials. Their suggestions were incorporated in revising and expanding the curriculum whenever it was appropriate.

The teachers who teach the 9th grade advanced Spanish II classes in Nashua thought that some of the true/false exercises were too easy, and felt that overall the unit was somewhat easier than their regular curriculum. The teachers who worked with Spanish I and 8th grade Spanish II classes all thought that the unit was about the same or harder than their regular class work in Spanish. All teachers concurred that *Los Arboles Hablan* is suitable for use at the end of the year in middle school Spanish I and at any time during the year in Spanish II.

All teachers concurred that students learned "A lot" of Spanish in this unit, and also learned "A lot" about Latin American forests.

4. Classroom Observations

The extensive classroom observation by INCRE evaluators yielded the following results:

- Students were engaged and on-task throughout the unit. The videos served to generate a lot of student interest which translated to rich discussions and attention to classwork and homework. Some students complained on the one day that a video segment is not used (Day 3).

- The extensive cooperative learning activities in pairs and small groups were integrated very well into the flow of the unit. There was no time lost to classroom mechanics or disruptive behavior.

- The length of all activities was very close to the times suggested in the lesson plans, and teachers had no difficulty in following the daily schedule. The teachers in Nashua, where classes are 50 minutes long, felt very comfortable with the timing of the unit. The teachers in Randolph, where some classes are as short as 42 minutes, felt that the timing was at times a little tight.

- The teacher's guide provided sufficient materials and guidance for teachers, none of whom needed additional support at any time during the field tests. Teachers felt that the materials and lessons provided in the teacher's guide were fully adequate.

- Nearly all activities were at an appropriate level of difficulty for middle school Spanish I and Spanish II students. Advanced Spanish II students found a few activities too easy.

- Teachers had no difficulty in operating the VCR and using the videotape. Teachers use the audiovisual equipment almost daily, and need to make arrangements to have exclusive access to the equipment throughout the unit. If more than one teacher is using the unit simultaneously, each teacher must have their own copy of the videotape and teacher's guide.

- The distribution of student materials on 3-hole punched paper works very well as long as all students supply a 3-ring binder. Handing out all student materials at the beginning of the unit is far preferable to passing out the pages day by day.

- Students were very motivated by the final poster project. Students are asked to make a fully bilingual poster showing one type of Latin American rain forest. Their interest in the theme was evident in the products, which were displayed in school corridors and generated many positive comments from school administrators and other teachers.

D. CONCLUSIONS

The main conclusion is that the curriculum unit *Los Arboles Hablan* has proved to be very popular with teachers and students alike, and has been shown to be effective in promoting Spanish language skills and knowledge of geography, science and environmental content related to the rain forests of Latin America. The success of the unit demonstrates that video can effectively be used as an integral component of instruction, and that an interdisciplinary curriculum can be effective in promoting language learning while teaching substantive content knowledge.

For additional information about *Los Arboles Hablan*, please contact INCRE at 366 Massachusetts Avenue, Suite 202, Arlington MA, Phone (617) 643-2142, Fax (617) 643-1315, or E-mail (Econet) at icre@igc.apc.org.

Los Árboles Hablan Newsletter

A Spanish language curriculum based on the study of Latin American rain forests

Intercultural Center for Research in Education (INCRE) **Fall 1997**

Dear teacher:

It is my pleasure to welcome you to the first issue of the ***Los Árboles Hablan*** newsletter. Our goal in starting this newsletter is to enrich teachers' use of the curriculum by providing additional extension activities, teaching suggestions and background information, as well as providing a forum for your feedback.

In future issues of the newsletter, we will publish your comments about the curriculum, suggestions for additional activities that worked well with your students, hints on how to use ***Los Árboles Hablan*** in collaboration with your colleagues in various subject areas, and samples of student work. Please help us by sending in any ideas, suggestions, experiences or work samples that you think other teachers would find useful. In each issue, we will select teachers' submissions for publication.

In this issue, you will find an activity entitled ***"El Amazonas es el Río Más Largo del Mundo"***. The student page is numbered as Lesson 5-8. It appears on the back page of the newsletter, and you can photocopy it for inclusion in the student handout packets. On the inside two pages of the newsletter you will find teaching suggestions for four activities and answers to the first student exercise.

Please let us hear from you. You can write to us at INCRE, 366 Massachusetts Avenue, Arlington, MA 02174 or send e-mail to icre@igc.apc.org. Also please visit our website at www.incre.org. ¡Hasta pronto!

Nancy C. Barra

Dr. Nancy Carmen Barra
INCRE President

Workshops

INCRE continues to offer one-day in-service training workshops to teachers who want to become familiar with the ***Los Árboles Hablan*** curriculum. The course presents an overview of the entire curriculum, provides supplementary information about the different types of rain forests, familiarizes teachers with a variety of instructional strategies, and presents extension and evaluation activities.

Teachers receive 8 hours of continuing education credit and a $20 discount off the purchase of the ***Los Árboles Hablan*** curriculum. One-day workshops will be offered at INCRE in July and August 1998. Workshops can also be conducted in your school district. For additional information about the summer workshops, or to schedule an in-service course at your school, please call toll free **1-888-INCRE-SI** (1-888-462-7374).

Amazon Documentary Available in Spanish

In response to teacher requests, INCRE has produced the video documentary segment about the Amazon Rain Forest, which is part of Lesson 2 of the ***Los Árboles Hablan*** curriculum, with Spanish narration as a separate product.

The 10-minute video documentary, with new footage of logging in the Amazon, has been dubbed in Spanish and is available with a teacher's guide for $39. The tape includes both the English and Spanish versions of the documentary. The teacher's guide includes the full text of the narration in both Spanish and English, as well as suggestions for using the video in science, social studies and Spanish language classes.

You may order the video documentary by calling our toll-free number 1-888-INCRE-SI (1-888-462-7374), or by sending a check or school purchase order for $39 plus $3 shipping to INCRE, 366 Massachusetts Avenue, Arlington MA 02174. Please ask for the Amazon Documentary Video. MC/Visa accepted.

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Lesson 5-8 Teaching Suggestions

Activity 1: Reading Comprehension: Focus on Verbs.

The article ***"El Amazonas es el río más largo del mundo"*** has 3 paragraphs. Form groups of three students each. First, ask all students to read the entire article silently. They will probably not understand all the information at first.

After students review the article, ask each student in every group to select one paragraph. On a piece of paper, ask each student to make a table with five columns, with the headings as shown in the example on the bottom of the student sheet. To save a few minutes, you may wish to prepare the table beforehand and pass out copies to each student. Ask students to complete the table for all the verbs in their paragraph. Students should be encouraged to use a dictionary to look up words they are not familiar with.

After students complete the table for the verbs in their paragraph, each student presents their answers to the group. Each student then reads the entire paragraph to the group, and asks if everyone understands what it says.

Activity 2: Discussion To Develop Critical Thinking Skills and Build Vocabulary.

Ask students why they think the lengths of rivers change and why different organizations publish varying statistics. This discussion will probably need to be carried out in English, although you can introduce Spanish vocabulary as appropriate. Likely responses will have to do with modern measurement techniques (satellite photos provide more accurate measurements than traditional methods, especially in areas that are difficult to access, such as the Amazon River basin) and with erosion (over time, rivers change their course, cutting new channels and extending their winding path through lowland areas).

Activity 3: Questions and Answers: Sentence Construction.

Using the article ***"El Amazonas es el río más largo del mundo"***, ask each student to write:

a. two questions using the expression: **¿Cuál o Cúales....?** (Which...?)
b. two questions using the expression: **¿Quién...?** (Who.....?)
c. two questions using the expression: **¿Dónde...?** (Where...?)
d. two questions using the expression: **¿Cuántos..?** (How many?)

Form groups of four students. Using the "carrousel technique" (See Lesson 3-1), each student in the group must ask a question to the student to his/her right. The student can respond by looking for the right answer in the text. Then the student who answered must ask a question to the student on her/his right and so on until all students in the group have asked and answered two questions each.

Suggestion: Ask students to use as many words as possible from the article to pose and answer questions. For example:

Question: *¿Cuál es el río más largo del mundo?*
Answer: *El Río Amazonas es el río más largo del mundo.*

Activity 4: Musical Interlude

If you are in the mood for a musical activity, copy the following lyrics on the blackboard. Go over the meaning of the lyrics with the class, then, using the melody from "*La Cucaracha*", ask students to sing along:

El Amazonas, el Amazonas
es un río tropical
Cruza la selva del continente
por el medio natural.

El Mississippi y el río Nilo
ríos de gran longitud
pero el más largo en el planeta
es de América del Sur.

You can divide the class in two. First one half sings, then the other, then all sing together.

Lesson 5-8 Answers to Activity 1

Párrafo # 1:

Verbo	Tiempo Verbal	Verbo Infinitivo	Significado	Sujeto
es	presente	ser	is	El Nilo
es	presente	ser	is	el río Amazonas
dijo	pasado	decir	said	Paulo Martini
muestran	presente	mostrar	show	las fotografías del satélite
tiene	presente	tener	has	el río Amazonas
es	presente	ser	is	La longitud del río Amazonas

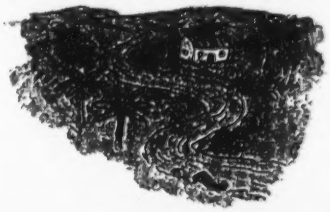
Párrafo # *2:*

Verbo	Tiempo Verbal	Verbo Infinitivo	Significado	Sujeto
dice	presente	decir	says	Esta nueva información
es	presente	ser	is	El río Amazonas
dependen	presente	depender	depend on	Las diferencias de longitud de los ríos
comienzan	presente	comenzar	begin	Las fuentes de los ríos
nace	presente	nacer	is born	El río Nilo
desemboca	presente	desembocar	flows into	El río Nilo
nace	presente	nacer	is born	El río Mississippi
desemboca	presente	desembocar	flows into	El río Mississippi

Párrafo # *3:*

Verbo	Tiempo Verbal	Verbo Infinitivo	Significado	Sujeto
establece	presente	establecer	defines	National Geographic Society
mide	presente	medir	measures	el río Amazonas
tiene	presente	tener	has	el río Nilo
indica	presente	indicar	indicates	el Banco Interamericano de Desarrollo
tiene	presente	tener	has	el Amazonas
tiene	presente	tener	has	el río Nilo

Working in groups of 3, read the following article, which is from a real Spanish language newspaper, then follow directions on how to complete a table like the one shown below.



El Amazonas es el río más largo del mundo

El Nilo ya no es el río más largo del planeta. El río más largo del mundo es el río Amazonas. Paulo Martini del Instituto Nacional de Investigación del Espacio de Brasil dijo que las fotografías del satélite muestran que el río Amazonas tiene 300 kilómetros más de largo. La longitud del río Amazonas es ahora de más de 7,000 kilómetros.

Esta nueva información dice que el río Amazonas es más largo que el río Nilo de Egipto y que el río Mississippi de los Estados Unidos. Las diferencias de longitud de los ríos dependen de dónde comienzan las fuentes de los ríos. El río Nilo nace en las alturas del este de Africa y desemboca en el Mar Mediterráneo. El río Mississippi nace en el lago Itasca en Minnesota y desemboca en el Golfo de México.

Por ejemplo, la National Geographic Society de Washington establece que el río Amazonas mide 6,437 kilómetros de longitud y que el río Nilo tiene 6,825 kilómetros de largo. Sin embargo, el Banco Interamericano de Desarrollo indica que el Amazonas tiene 6,762 kilómetros de longitud y el río Nilo tiene 6,671 kilómetros de largo.

(Adaptado de *Reuters News Agency*, 4 de Agosto '95)

1. Identify and underline the verbs in each sentence and write them in the first column, labeled "**Verbo**".

2. Determine if each verb is in present, past or future tense and write it in the second column, labeled "**Tiempo Verbal**" (Verb Tense).

3 Write the Infinitive of each verb in the third column "**Verbo Infinitivo**" (infinitive verb) and its meaning in English in the fourth column. Look up the verb in the dictionary if necessary.

4. In the 5th column, identify the subject that each verb refers to.

Example: *El Nilo ya no <u>es</u> el río más largo del planeta.*

Verbo *(Verb as it appears in the text)*	**Tiempo Verbal** *(Verb Tense)*	**Verbo Infinitivo** *(Infinitive)*	**Significado del Verbo** *(meaning of the verb)*	**Sujeto** *(subject that verb refers to)*
es	present	ser	is	El Nilo

5. Question for discussion: Why do you think the lengths of rivers change?

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NORTHEAST CONFERENCE
on the Teaching of Foreign Languages

Newsletter 39 Winter 1996

Los árboles hablan

(Spanish and English, 1994, color, not rated; Intercultural Center for Research in Education, Inc., 366 Massachusetts Ave., Arlington, MA 02174; VHS, 55 minutes, $149.00)

Los árboles hablan is an enjoyable peripheral unit of study for a beginning level one or two Spanish class. It is a video-based curriculum unit which promotes the learning of Spanish through the study of Latin American rain forests. The video follows two teenage students in their study of, and subsequent travels to, various Latin American countries. Teresa, a fifteen-year-old student, has chosen to do her science project on the Amazon jungle in Brazil. She and her friend Ricardo view a video about the Latin American rain forests and travel to several Latin American countries, such as Brazil, Costa Rica and Chile. The video footage of their trips is visually stimulating, and the accompanying language alternates between Spanish and English. Clear subtitles are provided for the Spanish.

The video portion of the program provides the background and motivation for the printed materials which come with the package. Each student is expected to have copies of 44 double-sided sheets of interesting readings, games, dialogues and homework exercises. (In keeping with its environmental theme, the printed materials provided by INCRE are printed on recycled paper, and teachers are encouraged to copy the student materials on double-sided paper, both for environmental and format reasons.) The publishers recommend students keep these sheets in a three-ring binder and bring them to class each day. My students found this respite from their regular textbook, workbook and notebook motivational in itself!

The printed materials are both visually appealing and easy to understand and use. Information is provided in the form of dialogues, charts, maps and simulated brochures. All of the dialogues which appear in the video program appear in the student workbook. This is particularly helpful in that students are prompted to read the dialogues in English before viewing the video, and then to act out the dialogue in Spanish after the viewing. The performing of the dialogue, besides providing students with the opportunity to pronounce new vocabulary words in a meaningful context, is particularly appealing to middle school students, as they enjoy the movement and pantomime aspects of this practice. The wide variety of activities is perfect, and the quick pacing between them helps to keep students focused and interested.

Evaluation is provided in the form of one quiz, one exam, and one poster project. The teacher's guide contains a wonderful chart corresponding to each chapter which shows the suggested amount of time to be apportioned for each activity. There is, however, a great deal of English in this program, as its aim is both to practice Spanish and to provide information about the rain forests.

As a result, teachers may want to spend more time than is suggested practicing vocabulary and some of the more advanced grammatical concepts presented in the dialogues.

Despite several small technical problems, **Los árboles hablan** is an interesting and fun unit which is well worth the three weeks it should take to complete. Its content and style are perfect for a beginning middle school class and should be enjoyed by both students and teachers alike.

Lori Langer de Ramírez
Polytechnic Preparatory Country Day School
Brooklyn, New York

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Los Árboles Hablan

A Spanish language curriculum unit based on the study of Latin American rain forests

Intercultural Center for Research in Education

Centro Intercultural de Investigación en Educación

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***Los Árboles Hablan* comes complete in a custom-designed package that includes:**

- A 55-minute videotape organized in 10 segments, including extensive footage from rain forests in Brazil, Costa Rica and Chile
- A bound, easy to use teacher's guide that includes 12 daily lesson plans and answers to all activities
- A folder with black-line masters of 60 student activity sheets, with clear instructions for two-sided photocopying
- A Spanish/English dictionary that contains all vocabulary used in the unit
- A mid-unit quiz and final test
- A final bilingual poster project
- Suggestions for follow-up activities

Los Árboles Hablan is designed for students taking Spanish I and Spanish II in grades 7-10. However, grade 6 students taking Spanish can also benefit form this interdisciplinary curriculum. The unit is designed to be used at the end of Spanish I or at any point during Spanish II.

The curriculum unit takes a minimum of 3 weeks to complete, with many opportunities for extension and follow-up activities.

IN-SERVICE TRAINING COURSE

A one-day in-service teacher training course is available to familiarize teachers with the entire curriculum and with relevant instructional strategies. To arrange for a ***Los Árboles Hablan*** in-service course at your school, please call toll free:1-888-INCRE-SI.

Los Árboles Hablan is a video-based curriculum unit that promotes the learning of Spanish as a foreign language through the study of Latin American rain forests. The curiculum consists of a video and accompanying instructional materials for students in grades 7-10, and integrates science, social studies and environmental education while teaching the Spanish language. The content specifically focuses on the Amazon rain forest, the ancient temperate rain forests of Chile and Costa Rica's cloud forest.

The approach to the development of the instructional materials is grounded in INCRE's belief that language and culture are inseparable. We believe that students are more open to acquire foreign language skills and to improve existing skills if they develop an interest in and an understanding of the subject matter on which language learning is based. The curriculum focuses on the conservation of rain forests and provides an opportunity to introduce students to a critically important environmental issue for Latin America and the world.

The videotape and printed components of the curriculum have been designed to be used in an integrated manner in the middle and high school Spanish language classroom. The video and accompanying written materials are divided into twelve segments, with activities in each segment designed to take up one to two class periods. If used daily, the curriculum takes approximately three weeks to complete.

In the videotape, students are introduced to Teresa and Ricardo, two Hispanic-American teenagers who serve as their guides throughout the unit. Each curriculum day, the students view approximately six to eight minutes of video. Content and language learning are offered in an engaging, appealing format as Teresa and Ricardo receive letters and calls from relatives in Latin America, and eventually go on their own expeditions to the forests. Video footage from the forests of Chile, Brazil and Costa Rica has been woven throughout the production to offer students the opportunity to see the beauty of the forests and its inhabitants, as well as the effects of deforestation.

The classroom activities have been specifically designed to complement the video, with related vocabulary and language learning exercises for each day, at an appropriate level for middle and high school Spanish-language classes. Both the video and written materials contain English and Spanish sections, designed to introduce content while strenthening language skills. The written materials include scripts of the video components in English and Spanish, so that students and teachers may read the scripts before-hand or follow along as appropriate. Some Spanish segments of the video also include Spanish subtitles, enabling students to see and hear the words simultaneously. A dictionary of all vocabulary used in the unit is included.

An accompanying Teacher's Guide provides an introduction to the curriculum, an overview of the organization of the materials, complete lesson plans, a classroom-tested quiz and final test, answers to all activities, and suggestions for integration with other subject areas.

It is our belief that ***Los Árboles Hablan*** offers teachers and students a valuable opportunity to engage in Spanish language learning which is geared to and respectful of a wide spectrum of learning styles. In addition, we believe that these materials promote respect for Latin American culture, and encourage concern for the preservation of our environment.

Los Árboles Hablan
Order form

Ship To:
Name:
Title:
School/Organization:
Address:
City, State, Zip:
Telephone:
Fax, e-mail:

_____Orders of ***Los Árboles Hablan*** @$149 plus $5.00 shipping charge per unit

Total $_____

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Questions? Please call toll free:

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1(888) 462-7374

Mail Your Order to:

Intercultural Center for Research in Education (INCRE)
366 Massachusetts Avenue
Arlington, MA 02174-6733

You may fax credit card orders to: (781) 643-1315

All materials are unconditionally guaranteed. You may obtain a full refund if not satisfied with the curriculum. Quantity discounts are available. Please call for details.

Please answer the following questions to let us know how the curriculum will be used:

1. In what classes will you use ***Los Árboles Hablan***?

   Spanish I Spanish II Other (Please describe)_____

2. In what grades will you use ***Los Árboles Hablan***?

   Grade 7 Grade 8 Grade 9 Grade 10 Other (Please specify)_____

3. How did you hear about ***Los Árboles Hablan***?
   (Please describe)_____

4. Are you interested in the ***Los Árboles Hablan*** in-service training course? YES NO

The Intercultural Center for Research in Education (INCRE) is a 501(c)(3) non-profit educational research and technical assistance organization. Formed in 1990, INCRE is dedicated to projects that promote quality and equity of education in the United States, Latin America and the Caribbean, and to projects that combine humanistic education, science and technical education, and environmental education.

INCRE develops curriculum materials in the areas of science, environmental education, Spanish as a foreign language, bilingual and multicultural education, and English as a second language instruction.

INCRE also conducts educational research, evaluation and test development, and provides staff development and training to support a variety of educational improvement efforts.

For additional information about INCRE products and services please contact us at:

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What they say about *Los Árboles Hablan:*

Middle School Spanish teachers who used *Los Árboles Hablan* have said:

"The students really enjoyed the project and they learned a lot of Spanish too. I also learned a great deal using the materials."

"The message is important and the change of pace was great."

"The unit was very well organized. I didn't have to do lesson plans for three weeks. What a treat!"

Middle school students who used *Los Árboles Hablan* have said:

"You not only learn about the forests, you learn more Spanish while you're at it."

"We learned a lot of Spanish and about working together. Also about the rain forests and how we can save or conserve them."

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